

# *Benthic Habitat Research for Marine Natura 2000 Site Designation*

**LIFE BaHAR12 NAT/MT/000845**



*Executive Summary*

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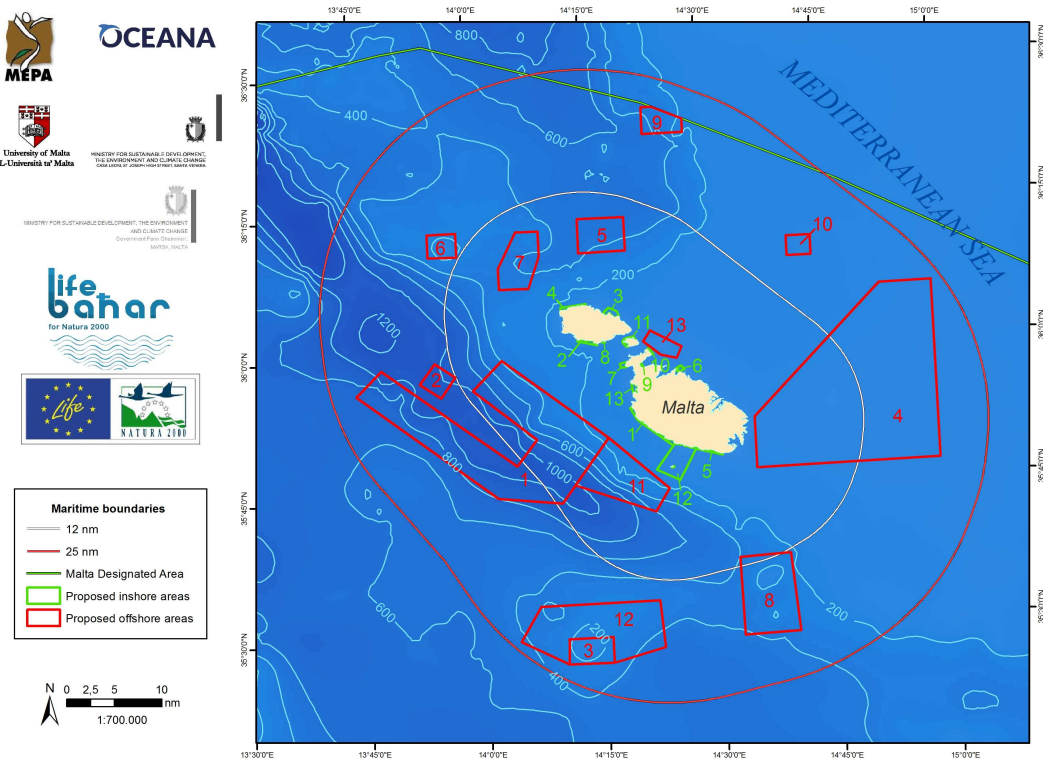
**Action A3: Marine Habitat Surveys**

Natura 2000 is the centrepiece of the Habitats Directive, functioning as a network of protected areas. In order to comply with this European policy, Malta has already identified 5 Sites of Community Importance (SCIs) for inclusion in the Natura 2000 Network as Special Areas of Conservation (SAC). These 5 SCIs in Malta are located around the coast of the Maltese Islands, covering roughly an area of 190.79 km<sup>2</sup> and mainly intended to protect Neptune grass (*Posidonia oceanica*) beds (1120). Consequently, it was acknowledged that a dearth of data on marine habitats has impeded further designation efforts, because of the complex, costly, and resource-intensive nature of this type of research.

The Project LIFE BaHAR “*Benthic Habitat Research for Marine Natura 2000 Site Designation*” is coordinated by the Malta Environment and Planning Authority (MEPA), in partnership with Fundación Oceana, the Ministry for Sustainable Development, Environment and Climate Change (MSDEC), the Department of Fisheries and Aquaculture within MSDEC and the University of Malta - Department of Biology (UoM-DoB). It is intended to explore Maltese waters, in order to map the distribution of three habitats listed in Annex I of the Habitats Directive: ‘*Reefs*’ (1170), ‘*Submerged and partially submerged caves*’ (8330), and ‘*Sandbanks which are slightly covered by sea water all the time*’ (1110), with the eventual objective of designating new marine SCIs for their protection.

Under the project’s **Action A1 (Desktop Data Collection)**, a literature review was carried out by DFA. This Action was further completed by the first phase of **Action A2 (Data Analysis and Interpretation)**, in which the data collected through Action A1 was analyzed by UoM-DoB. Two sets of areas, including 13 coastal and 13 offshore areas, were selected for surveying, based on the likelihood of occurrence of at least one of the three relevant habitat types and to address knowledge gaps. It was considered appropriate to treat shallow coastal areas (down to 50 m depth) and deep offshore areas (down to more than 1,000 m depth) separately, as they differed with regards to available information and required sampling methods. The ongoing **Action A3: Marine Habitat Surveys** is conducted by Fundación Oceana, and involves two at-sea expeditions. Preliminary results of the first survey carried out in June-July 2015 are described hereafter.

Figure 1. Malta sampling area



The first at-sea campaign undertaken as part of Action A3 was carried out on board the vessel *Oceana Ranger*, a Ketch catamaran with thirteen crew members. Underwater video footage was recorded from 94 transects along the Maltese seabed, 9 conducted within the pre-selected inshore areas, and 85 in the offshore zones.

A Saab Seaeeye Falcon DR ROV was used for image recording, equipped with a High Definition Video (HDV) camera, able to simultaneously track full-time position, depth and course of each transect. When possible, in inshore areas, SCUBA dives were carried out by a professional team equipped with underwater photo and video cameras. These non-intrusive methods were selected to be the most suitable according to the characteristics of the project.

In order to process the obtained information, the species identification was done visually. Samples of important habitat-forming species were also collected (by means of the robotic arm of the ROV, a *Van Veen* grab, and directly by SCUBA divers) for detailed analyses to confirm preliminary identification. A total of 86 samples were collected and processed in the

onboard laboratory. Local scientists and fish experts from the UoM-DoB also provided onboard expertise and support during the expedition.

- Substrate:

The preliminary results in offshore areas revealed the presence of muddy bottoms and slopes with soft bottoms extending over relatively wide areas; steep rocky escarpments with overhangs and crevices were also found to occur in some areas. The studied inshore areas included vertical rock faces consisting of steep vertical walls, and a few to several emergent and submerged marine caves. Small rocky escarpments and overhangs, interspersed with muddy and sandy bottoms were found at greater depths.

- Habitats:

- Up to 34 **caves** were found in different inshore areas. These geographical formations were not only detected close to shore: four caves and crevices were also found in deep, offshore areas.
- In order to locate **sandbanks**, two SCUBA dives were carried out over *Cymodocea* seagrass meadows (*Cymodocea nodosa*), and a single ROV dive was carried out over a Neptune grass (*Posidonia oceanica*) meadow. No sandbanks were found in either area. During the 2016 expedition, further surveys aimed at identifying sandbanks will be carried out in the two main areas where this habitat type could potentially occur.
- **Reefs** were widely documented, especially at great depths, and were characterized by a multitude of deep-sea corals and sponge aggregations. Such reefs are considered to be vulnerable ecosystems since they create complex habitats that support many other species by providing them with shelter, and serving as feeding, breeding, and nursery areas.

Moreover, as a consequence of the research conducted on the Maltese bottoms, other parallel results have been reported aside from those habitats for which this expedition was aimed at:

- New records of species' presence and depth range have been reported for Malta and the Mediterranean area. For instance, a new record for the deepest occurrence of the precious red coral *Corallium rubrum* was established, which was some 200 m deeper than previous records. A number of echinoderms and gorgonian corals were also recorded for the first time in Maltese waters, while one species may be new for the Mediterranean.

- Extensive areas covered with rhodoliths (including various algal species), some of which may represent maërl bottoms, were recorded over both muddy bottoms and soft bottoms with rocky outcrops, at depths of approximately 75-100 m. Occasional patches were covered with the green algae *Flabellia petiolata*, and calcareous algae of the genus *Mesophyllum*. This area is regularly used as an anchorage and bunkering ground for commercial vessels.
- The *Oceana Ranger* depth sounder detected the presence of a reef, which turned out to be a fossilised lithistid reef. Based on ROV footage and the depth sounder data, the presence of a ca. 7 km long reef with dead lithistid sponges was revealed.
- Main threats: during nearly all dives conducted in Maltese waters, both with SCUBA divers and ROV, various types of marine debris and domestic as well as other garbage were recorded. The most noteworthy examples were plastics near to the shore, and lost fishing gear (e.g., fishing lines and limestone blocks used to anchor fish aggregating devices) on offshore bottoms. The latter type of debris was regularly found entangled in macrobenthic fauna, such as gorgonians, causing obvious and significant damage.